

Section 9

2002 Occupant Protection

Occupant Protection 1993 - 2002.....	9.2
Seatbelt Use	9.3
Seatbelt Use by Age and County	9.4
Seatbelt Use by Gender, Age and Occupant Placement	9.6
Children and Restraint Use	9.8
Ejection by Seatbelt Use	9.9
Air Bags.....	9.10
Safety Restraint Laws and Recommendations.....	9.11

TABLES

Table 9.01 Seatbelt Use by Age and County, Utah 2002

Table 9.02 Seatbelt Use by Gender, Utah 2002

Table 9.03 Seatbelt Use by Occupant Placement, Utah 2002

Table 9.04 Seatbelt Use by Age Group, Utah 2002

Table 9.05 Seating Location and Restraint Status of Children Under the Age of 9 Years, Utah 2002

Table 9.06 Percentage of Seatbelt Use for Occupants Whose Air Bag Deployed, Utah 2002

FIGURES

Figure 9.01 Percentage of Drivers and Front Seat Passengers Wearing Seatbelts in Crashes and Observational Studies, Utah 1993 - 2002

Figure 9.02 Seatbelt Use for All Occupants, Injured Occupants and Fatalities, Utah 2002

Figure 9.03 Ejection by Seatbelt Use, Utah 2002

Note:

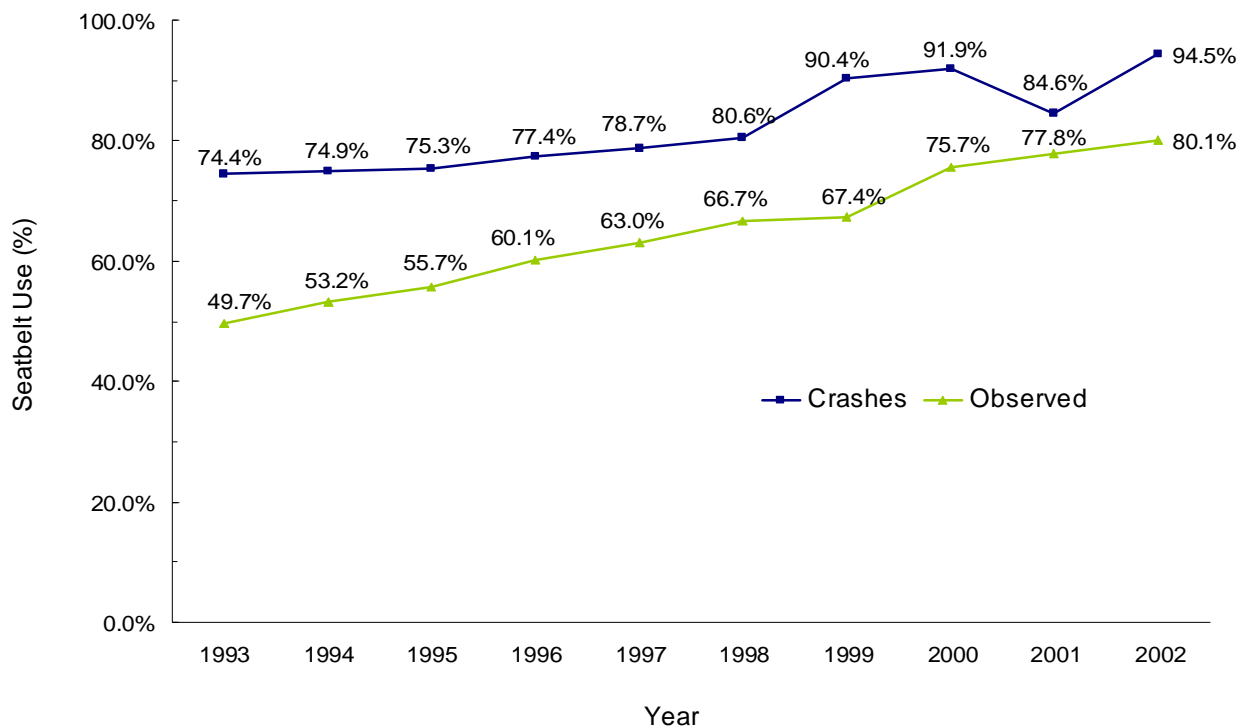
Seatbelt Use - Seatbelt use is reported for occupants in a passenger car, a light truck or van. Occupants are coded as wearing a seatbelt if they reported using a shoulder/lap belt, lap belt or a child safety seat (occupants using only a shoulder strap were reported to be unbelted) at the scene of the crash. In the majority of cases, seatbelt use as recorded by the investigating officer is self-reported by the crash occupant. It is possible that crash occupants may report using a seatbelt when they were not, in order to avoid a citation or fine, thus over-inflating the seatbelt use rate. In the case of fatal or severe injury crashes, the officer will determine the seatbelt use.

Observational Study - Each year the Utah Department of Public Safety's Highway Safety Office conducts a seatbelt usage observational study. Study sites are located throughout the state where trained observers can record seatbelt use for drivers and front seat passengers of slow moving or stopped vehicles. According to the 2002 study, 80.1% of Utah's drivers and front seat passengers were buckled up.

Occupant Protection 1993-2002

Figure 9.01 compares the percentage of seatbelt use reported in crashes to observational studies for drivers and front seat passengers. Seatbelt use by drivers and front-seat passengers has increased most years in both crash and observational studies. The difference between crash seatbelt use rates reported by crash participants or the investigating officer at the crash scene, and observed seatbelt use rates, may be due to over-reporting of seatbelt use by crash participants at the scene of a crash.

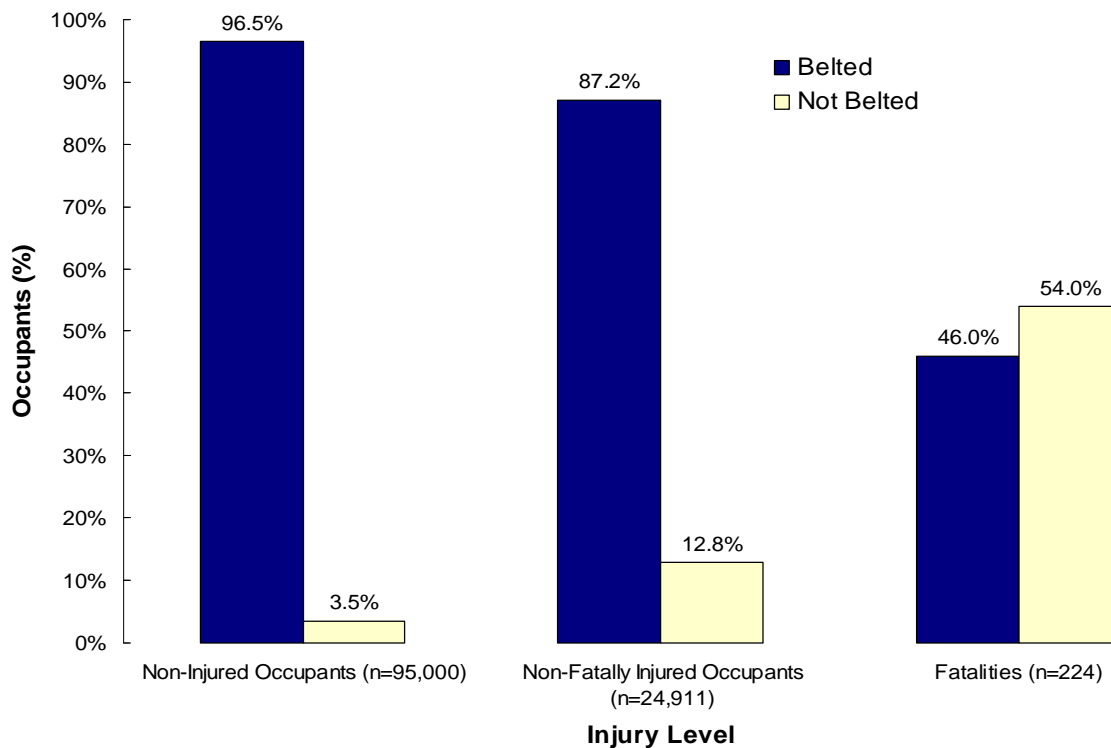
Figure 9.01 Percentage of Drivers and Front Seat Passengers Wearing Seatbelts in Crashes and Observational Studies, Utah 1993 - 2002



Seatbelt Use

Statewide seatbelt use for all crash occupants (including back seat occupants) as reported to crash investigating officers is shown in Figure 9.02. The majority (96.5%) of occupants involved in a crash and the majority (87.2%) of the injured occupants reported using a seatbelt. Only slightly more than two-fifths (46.0%) of the fatally injured occupants were belted. Seatbelts are an important safety feature; occupants who were not wearing a seatbelt were 20.4 times more likely to sustain a fatal injury than occupants who were wearing a seatbelt.

Figure 9.02 Seatbelt Use by Occupants, Utah 2002



Seatbelt Use by Age and County

Table 9.01 shows the self-reported seatbelt use of occupants by age and county. Davis County had the highest percentage of seatbelt use (96.6%), while Grand had the lowest percentage of seatbelt use (81.5%).

Table 9.01 Seatbelt Use by Age and County, Utah 2002

County	Seatbelt Use	Age Group																Total	Percent
		00-04	05-09	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+	Unknown			
Beaver	Belted	24	26	29	97	77	52	36	32	43	33	36	21	13	38	14	571	88.3%	
	Unbelted	5	3	5	25	7	6	2	6	4	3	1	1	3	5	0	76	11.7%	
Box Elder	Belted	56	60	79	335	203	112	108	87	105	80	70	36	43	120	29	1,523	89.6%	
	Unbelted	6	7	10	57	27	10	20	6	11	4	0	5	1	5	8	177	10.4%	
Cache	Belted	226	183	166	1,159	1,035	527	310	257	277	198	176	104	118	298	46	5,080	94.4%	
	Unbelted	8	9	14	69	81	25	13	12	11	18	11	4	8	10	6	299	5.6%	
Carbon	Belted	24	15	22	162	76	60	46	41	40	61	35	31	24	48	13	698	93.1%	
	Unbelted	1	0	2	15	17	2	3	1	5	2	2	0	1	1	0	52	6.9%	
Daggett	Belted	4	0	2	9	8	5	3	1	2	8	3	1	1	1	2	50	92.6%	
	Unbelted	0	0	0	1	0	0	0	1	1	0	0	0	1	0	0	4	7.4%	
Davis	Belted	505	401	427	2,612	1,519	950	726	638	660	558	443	319	238	548	128	10,672	96.6%	
	Unbelted	10	10	15	106	72	26	23	18	25	21	13	9	9	15	4	376	3.4%	
Duchesne	Belted	12	16	16	103	72	41	25	28	40	29	22	16	17	30	5	472	90.4%	
	Unbelted	0	0	2	17	8	4	2	3	5	1	2	2	1	3	0	50	9.6%	
Emery	Belted	28	32	30	87	70	45	27	26	29	21	22	17	17	26	4	481	83.2%	
	Unbelted	2	3	7	36	18	5	9	4	7	4	0	0	0	1	1	97	16.8%	
Garfield	Belted	7	13	10	36	38	28	25	12	19	20	15	17	12	32	2	286	84.6%	
	Unbelted	1	1	6	21	1	5	1	1	1	2	3	4	1	4	0	52	15.4%	
Grand	Belted	10	12	16	43	72	32	23	23	24	22	14	10	14	32	14	361	81.3%	
	Unbelted	3	0	3	20	18	9	3	8	5	1	5	1	3	1	3	83	18.7%	
Iron	Belted	104	77	62	396	285	130	91	97	105	94	69	63	45	135	19	1,772	86.7%	
	Unbelted	7	4	16	90	58	24	14	15	8	9	5	8	3	9	3	273	13.3%	
Juab	Belted	25	25	29	82	82	37	35	30	43	31	33	18	9	50	16	545	88.8%	
	Unbelted	2	5	7	18	15	5	3	2	1	3	0	0	2	5	1	69	11.2%	
Kane	Belted	16	15	23	65	71	36	34	18	29	29	27	22	17	22	7	431	86.2%	
	Unbelted	4	5	5	19	12	6	3	2	0	5	3	0	1	4	0	69	13.8%	
Millard	Belted	36	40	34	128	108	63	52	50	44	49	43	41	32	82	10	812	90.5%	
	Unbelted	3	5	4	34	12	4	4	3	5	1	2	3	3	2	0	85	9.5%	

Table 9.01 Seatbelt Use by Age and County, Utah 2002 (continued)

County	Seatbelt Use	Age Group														Total Percent	
		00-04	05-09	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+ Unknown	Total	Percent
Morgan	Belted	10	4	6	58	34	9	15	16	16	11	7	6	6	9	3	210 85.4%
	Unbelted	0	0	7	10	4	5	1	3	1	0	0	1	2	2	0	36 14.6%
Piute	Belted	6	3	10	8	6	2	5	1	8	2	9	4	0	2	7	73 93.6%
	Unbelted	0	0	0	0	2	0	0	0	1	0	0	2	0	0	0	5 6.4%
Rich	Belted	4	6	11	37	14	11	5	8	9	4	2	3	0	5	2	121 91.7%
	Unbelted	0	0	0	3	1	0	1	2	1	1	0	1	0	0	1	11 8.3%
Salt Lake	Belted	2,272	1,601	1,515	9,532	8,285	5,514	4,261	3,453	3,309	2,807	2,273	1,497	1,089	2,400	798	50,606 96.0%
	Unbelted	56	61	88	527	403	256	155	124	109	90	55	28	31	69	53	2,105 4.0%
San Juan	Belted	17	16	24	56	42	41	45	25	23	48	30	28	20	30	9	454 87.0%
	Unbelted	2	3	7	25	5	5	3	4	0	1	2	3	2	5	1	68 13.0%
Sanpete	Belted	15	20	21	163	73	31	33	28	34	21	11	20	18	31	10	529 83.7%
	Unbelted	2	6	8	24	18	8	2	6	5	5	3	5	1	9	1	103 16.3%
Sevier	Belted	34	34	29	134	140	57	63	43	44	44	47	29	22	60	18	798 86.8%
	Unbelted	1	6	5	39	27	9	11	5	4	4	1	1	1	6	1	121 13.2%
Summit	Belted	41	66	41	253	182	143	160	140	124	120	87	58	39	62	39	1,555 92.6%
	Unbelted	4	7	5	27	21	6	7	10	11	9	6	4	0	4	3	124 7.4%
Tooele	Belted	58	37	54	276	175	103	108	78	100	69	57	49	23	45	28	1,260 91.2%
	Unbelted	5	1	3	31	22	17	10	5	11	4	6	1	1	0	4	121 8.8%
Uintah	Belted	51	28	39	181	92	69	56	40	62	32	30	24	24	45	24	797 84.1%
	Unbelted	2	3	15	47	24	13	12	8	10	7	2	3	1	3	1	151 15.9%
Utah	Belted	886	532	496	3,252	3,422	1,745	1,061	842	827	662	564	448	321	783	253	16,094 94.0%
	Unbelted	28	22	42	292	238	103	79	50	42	33	24	17	11	31	11	1,023 6.0%
Wasatch	Belted	45	21	44	176	108	87	70	59	69	59	53	47	33	66	16	953 93.2%
	Unbelted	2	0	2	22	8	8	5	1	6	6	4	1	1	3	1	70 6.8%
Washington	Belted	198	149	147	1,052	639	303	249	233	228	203	174	138	130	400	58	4,301 92.4%
	Unbelted	15	10	23	111	74	23	24	15	10	10	11	3	4	19	3	355 7.6%
Wayne	Belted	4	12	7	24	9	16	10	9	12	9	5	4	3	7	3	134 86.5%
	Unbelted	0	0	5	8	3	2	1	2	0	0	0	0	0	0	0	21 13.5%
Weber	Belted	583	414	388	2,381	1,819	1,090	895	729	741	635	517	355	247	815	144	11,753 95.5%
	Unbelted	18	28	33	114	116	64	41	33	32	23	16	12	11	14	4	559 4.5%
Statewide	Belted	5,301	3,858	3,777	22,897	18,756	11,339	8,577	7,044	7,066	5,959	4,874	3,426	2,575	6,222	1,721	113,392 94.5%
	Unbelted	187	199	339	1,808	1,312	650	452	350	332	267	177	119	103	230	110	6,635 5.5%

Seatbelt Use by Gender, Age and Occupant Placement

Female and male crash occupants reported similar seatbelt use (approximately 94%). For injured occupants and fatally injured occupants, the reported seatbelt use was greater for females than for males. However, the reported seatbelt use for fatalities was almost half of that for total crash occupants regardless of gender (Table 9.02).

Table 9.02 Seatbelt Use by Gender, Utah 2002

Gender	Seatbelt Status	Non-Injured Occupants		Injured Occupants		Fatalities		Total Occupants	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
Female	Belted	41,207	97.1%	12,568	89.6%	53	61.6%	53,828	95.2%
	Unbelted	1,231	2.9%	1,464	10.4%	33	38.4%	2,728	4.8%
Male	Belted	50,381	96.0%	9,137	84.1%	50	36.2%	59,568	93.8%
	Unbelted	2,099	4.0%	1,728	15.9%	88	63.8%	3,915	6.2%
Total	Belted	91,588	96.5%	21,705	87.2%	103	46.0%	113,396	94.5%
	Unbelted	3,330	3.5%	3,192	12.8%	121	54.0%	6,643	5.5%
Grand Total		94,918	100.0%	24,897	100.0%	224	100.0%	120,039	100.0%

Note: Gender was not recorded for all occupants.

Reported seatbelt use did not vary substantially by seating location (Table 9.03). Among all occupants, drivers reported the highest seatbelt use compared to other seating locations.

Table 9.03 Seatbelt Use by Occupant Placement, Utah 2002

Placement	Seatbelt Status	Non-injured Occupants		Injured Occupants		Fatalities		Total Occupants	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
Driver	Belted	62,275	96.8%	14,775	89.6%	69	50.7%	77,119	95.3%
	Unbelted	2,036	3.2%	1,723	10.4%	67	49.3%	3,826	4.7%
Front Seat Passenger	Belted	16,144	95.7%	4,733	84.1%	18	35.3%	20,895	92.6%
	Unbelted	732	4.3%	898	15.9%	33	64.7%	1,663	7.4%
Back Seat Passenger	Belted	13,212	95.9%	2,205	79.4%	16	43.2%	15,433	93.0%
	Unbelted	562	4.1%	571	20.6%	21	56.8%	1,154	7.0%
Total Belted		91,631	96.5%	21,713	87.2%	103	46.0%	113,447	94.5%
Total Unbelted		3,330	3.5%	3,192	12.8%	121	54.0%	6,643	5.5%
Grand Total		94,961	100.0%	24,905	100.0%	224	100.0%	120,090	100.0%

Seatbelt use varied slightly by age (Table 9.04). For total occupants, occupants in the age group of 70 - 74 years had the highest rate of reported seatbelt use (97.1%), whereas, the age group 10 to 14 years (91.8%) reported the lowest percentage of seatbelt use. Among injured occupants, the age group 70 to 74 years reported the highest seatbelt use (95.7%) and those aged 10 to 14 years reported the lowest (80.0%). For fatally injured occupants, the age group 65 to 69 years reported to have the highest seatbelt use (87.5%) and those aged 10 to 14 years the lowest (22.2%).

Although police reported seatbelt or child safety seat use rate for children under the age of 10 years was often above 80%, it does not indicate that children were properly restrained. Unfortunately, several statewide surveys have found that child safety seats are often placed incorrectly in vehicles. In addition, young children are often moved to adult sized seatbelts prematurely when a booster seat is more appropriate. (see page 9.11 for Safety Recommendations).

Table 9.04 Seatbelt Use by Age Group, Utah 2002

Age Category	Non-Injured Occupants		Injured Occupants		Fatalities		Total Occupants	
	Total	% Belted	Total	% Belted	Total	% Belted	Total	% Belted
00-04	4,851	97.6%	635	89.0%	3	66.7%	5,489	96.6%
05-09	3,397	96.8%	651	86.6%	6	33.3%	4,054	95.1%
10-14	3,261	95.0%	845	80.0%	9	22.2%	4,115	91.8%
15-19	19,724	95.5%	4,931	82.1%	47	38.3%	24,702	92.7%
20-24	15,818	95.7%	4,218	85.3%	33	42.4%	20,069	93.5%
25-29	9,385	96.8%	2,579	86.7%	16	43.8%	11,980	94.6%
30-34	7,053	97.1%	1,957	88.0%	16	31.3%	9,026	95.0%
35-39	5,812	97.1%	1,568	88.8%	12	33.3%	7,392	95.3%
40-44	5,759	96.6%	1,627	91.7%	9	55.6%	7,395	95.5%
45-49	4,868	97.2%	1,346	90.9%	13	30.8%	6,227	95.7%
50-54	3,871	97.7%	1,169	92.6%	10	70.0%	5,050	96.5%
55-59	2,708	97.6%	824	94.1%	9	55.6%	3,541	96.6%
60-64	2,053	97.5%	613	92.2%	12	66.7%	2,678	96.2%
65-69	1,523	97.4%	438	94.7%	8	87.5%	1,969	96.8%
70-74	1,269	97.7%	419	95.7%	8	62.5%	1,696	97.1%
75-79	1,026	97.0%	346	93.6%	5	60.0%	1,377	96.0%
80-84	697	97.6%	215	92.1%	4	75.0%	916	96.2%
85+	367	97.0%	121	88.4%	4	50.0%	492	94.5%
Unknown	1,558	90.4%	409	76.0%	0	0.0%	1,967	87.4%
Grand Total	95,000	96.5%	24,911	87.2%	224	46.0%	120,135	94.5%

Children and Restraint Use

The proportion of children under the age of 9 years who were reported as unbelted increased with increasing age (Table 9.05) The majority of children under the age of 2 years (86.8%) were in child safety seats in the back seat at the time of the crash, compared to 67.2% of children aged 2 to 4 years. Children under the age of 2 years were 3.3 times more likely to be in a child safety seat than children between the ages of 2 to 4 years. The majority (95.7%) of children between the ages 5 to 8 years were in the back seat belted or in a child safety seat. Child safety seat usage was highest for children in the back seat; children in the back seat were 4.2 times more likely to be in a child safety seat than children in the front seat.

Utah's Child Restraint Law requires all children under the age of 19 years to be properly restrained when riding in a motor vehicle. In addition, children age 4 years and younger must be restrained in a child safety seat (see page 9.11 for Safety Laws and Recommendations).

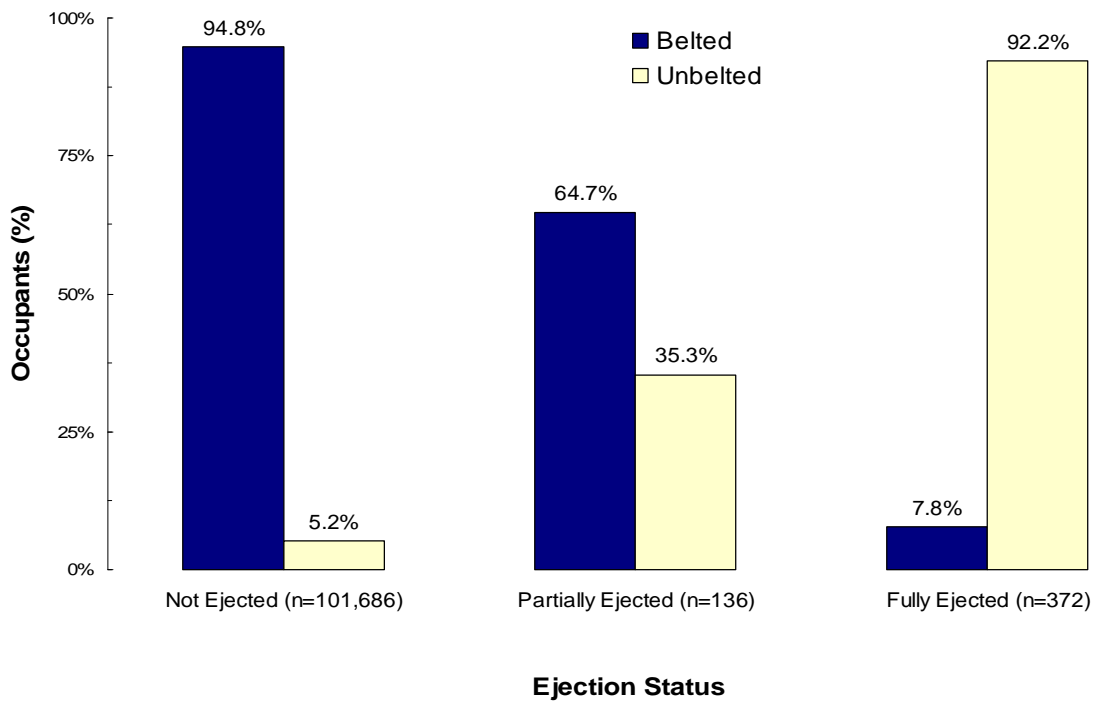
Table 9.05 Seating Location and Restraint Status for Children Under Age 9 Years, Utah 2002

Seating Location	Seatbelt Status	Ages 0 - 1		Ages 2 - 4		Ages 5 - 8		Total
		Number	Percent	Number	Percent	Number	Percent	
Back Seat	Child Safety Seat	1,594	86.8%	2,124	67.2%	344	13.2%	4,062
	Other Belted	226	12.3%	963	30.4%	2,153	82.5%	3,342
	Unbelted	16	0.9%	76	2.4%	113	4.3%	205
Front Middle	Child Safety Seat	27	75.0%	20	29.9%	5	4.1%	52
	Other Belted	6	16.7%	39	58.2%	101	82.8%	146
	Unbelted	3	8.3%	8	11.9%	16	13.1%	27
Front Right	Child Safety Seat	75	72.8%	105	42.3%	19	3.2%	199
	Other Belted	25	24.3%	131	52.8%	533	90.5%	689
	Unbelted	3	2.9%	12	4.8%	37	6.3%	52
Total	Child Safety Seat	1,696	85.9%	2,249	64.7%	368	11.1%	4,313
	Other Belted	257	13.0%	1,133	32.6%	2,787	83.9%	4,177
	Unbelted	22	1.1%	96	2.8%	166	5.0%	284
Grand Total		1,975	100.0%	3,478	100.0%	3,321	100.0%	8,774

Ejection by Seatbelt Use

Figure 9.03 shows an inverse relationship between ejection from a motor vehicle and seatbelt use. The majority (92.2%) of the occupants ejected from a motor vehicle were reported as not using a seatbelt, compared to only 5.2% of occupants not ejected from a motor vehicle.

Figure 9.03 Ejection by Seatbelt Use, Utah 2002



Air Bags

Table 9.06 shows the age of occupants whose air bag deployed and the percentage belted. A majority of the total and injured occupants whose air bag deployed were wearing a seatbelt. However, only 71.4% of fatalities whose air bag deployed were wearing a seatbelt.

Table 9.06 Percentage of Seatbelt Use for Occupants Whose Air Bag Deployed, Utah 2002

Age Category	Non-Injured		Injured Occupants		Fatalities		Total Occupants	
	Total	% Belted	Total	% Belted	Total	% Belted	Total	% Belted
00-04	12	100.0%	6	50.0%	0	0.0%	18	83.3%
05-09	4	100.0%	12	91.7%	0	0.0%	16	93.8%
10-14	11	90.9%	21	71.4%	0	0.0%	32	78.1%
15-19	169	95.3%	303	84.2%	3	33.3%	475	87.8%
20-24	220	93.6%	279	86.4%	3	66.7%	502	89.4%
25-29	83	96.4%	160	89.4%	2	100.0%	245	91.8%
30-34	73	93.2%	118	93.2%	0	0.0%	191	93.2%
35-39	47	100.0%	80	91.3%	1	100.0%	128	94.5%
40-44	44	95.5%	93	97.8%	2	50.0%	139	96.4%
45-49	38	100.0%	54	94.4%	1	100.0%	93	96.8%
50-54	23	100.0%	77	90.9%	1	0.0%	101	92.1%
55-59	22	95.5%	47	95.7%	3	66.7%	72	94.4%
60-64	21	100.0%	32	93.8%	0	0.0%	53	96.2%
65-69	17	100.0%	24	95.8%	1	100.0%	42	97.6%
70-74	11	100.0%	35	97.1%	2	100.0%	48	97.9%
75-79	15	93.3%	35	91.4%	0	0.0%	50	92.0%
80-84	5	80.0%	23	87.0%	1	100.0%	29	86.2%
85+	2	100.0%	7	42.9%	1	100.0%	10	60.0%
Unknown	14	92.9%	11	100.0%	0	0.0%	25	96.0%
Grand Total	831	95.5%	1,417	89.0%	21	71.4%	2,269	91.2%

Safety Restraint Laws And Recommendations

Safety Restraint Use Law

Utah law requires all motor vehicle occupants to be wearing a seatbelt when traveling in a motor vehicle. The purpose of this law is to protect Utahns from needless death and injury and reduce taxpayer costs resulting from traffic collisions. The law is a secondary law which means a person may be issued a citation only when the police officer has stopped the vehicle for another reason. Any person who violates this law is subject to a fine of \$45, reduced to \$15 upon completion of a traffic safety educational class. Exceptions to the law include, delivery personnel, rural letter carriers, persons driving vehicles used for farm purposes, individuals in motor vehicles manufactured before July 1, 1966, and individuals with physically disabling or medical condition which would prevent appropriate use of a safety belt. Visitors from outside Utah are also required to wear a seatbelt when traveling in Utah. The law is primary for drivers and passengers under age 19 years. Children age 4 years and under must ride in an approved child safety seat and children aged 5 to 19 years must ride in an approved child safety seat or seatbelt. This is a primary law which means a law enforcement officer can stop a vehicle if he/she notices children are not properly restrained. A fine can be issued solely for not restraining a child under the age of 19 years and violators will be subject to a fine of not more than \$45. The first offense shall be dismissed if the driver shows proof of acquiring a child safety seat or seatbelt. The driver is responsible for unrestrained occupants under the age of 16 in the vehicle, whether or not they are the parents of the unrestrained child.

Child Safety Seat Recommendations

- Infants should be placed in a rear facing child safety seat until they are at least 20 pounds AND 1 year of age.
- Children over 1 year of age weighing 20 - 40 pounds should ride in forward facing child safety seats.
- Older children (approximately 4-8 years of age) should ride in belt-positioning booster seats until they are approximately 80 pounds and can use an adult-size lap and shoulder belt system.
- Avoid using secondhand child safety seats especially if it does not have the original instruction booklet, if it has been used in a crash, if it does not have the manufacturer's date and model number on it, or if it is more than six years old.
- If your car has lap/shoulder combination belts, it could be critical to use a locking clip to properly secure your safety seat to the car. Consult the vehicle owner's manual.
- The safest place for any child age 12 and under is in the back seat of the vehicle.
- Children should never be held on an adult's lap. The force of the collision would tear a child from the adult's arms. If the adult is not wearing a safety belt, the child could be crushed between the adult's body and the dashboard.

Seatbelt Recommendations

- Always use both the lap and shoulder belt. When worn properly, the shoulder belt should fit across the collar bone and the lap belt should fit low over the hips.
- Never place the shoulder strap under your arm or behind your back.
- Use belt-positioning booster seats for children who have outgrown their toddler safety seat (at about 4 years of age and 40 pounds). Booster seats help position an adult-size seatbelt for a safer fit on children.

Air Bag Safety Recommendations

- NEVER place a rear facing child safety seat in the front seat of a vehicle with a passenger side air bag.
- Place children age 12 years and younger in the back seat in an age and size-appropriate child safety seat or seatbelt.
- If you are the driver, keep 10 - 12 inches between you and the steering wheel.
- Move the front passenger seat as far back as possible.
- Shorter drivers, who cannot get 10 inches from the steering wheel and still comfortably reach the pedals can purchase pedal extender (call (813) 932-8566 for more information).
- Air bags are "supplemental" to seatbelts. Be sure you and your passengers use both the lap and shoulder portion of the seatbelt and children ride in appropriate child safety restraints in the back seat.
- If you MUST disconnect your vehicle's air bag contact Utah Highway Safety at (801) 293 -2480 or log onto the National Highway Traffic Safety Administration website at <http://www/nhtsa.dot.gov> for information.